1.1.3.1 Segment 1 – Merced to San José

In this segment, all alignments would be on an exclusive guideway with separate tracks for high-speed trains and would connect to the Sacramento-to-Bakersfield high-speed train corridor. Two separate corridors are being studied:

Corridor 1A. This corridor would run between Merced and San José, via Pacheco Pass and Gilroy. Two options for the alignment are being considered:

- Gilroy Option: This alignment would extend from Merced through the San Joaquin Valley and Pacheco Pass, through Gilroy, and then north along the Caltrain/Union Pacific Railroad (UPRR) rail corridor. Within this option, two suboptions are under consideration – the alignment of each is a reflection of the design speed.

  Stations would include Los Baños (near I-5) in the San Joaquin Valley, Gilroy (near the existing Caltrain Station), and the existing San José (Diridon) Station.

- Gilroy Bypass Option: This alignment would extend from Merced through the San Joaquin Valley and Pacheco Pass and then north along the Caltrain/UPRR rail corridor.

  Stations would include Los Baños (near I-5) in the San Joaquin Valley, Morgan Hill (near the existing Caltrain Station), and the existing San José (Diridon) Station.

Corridor 1B. This corridor would run between Merced and San José, via Atwater and across the Diablo Mountain Range and would include one station – at the existing San José (Diridon) Caltrain Station. Three options for the alignment are being considered:

- Northern Tunnel Option: This alignment would emanate from the BNSF rail corridor or the UPRR corridor near the town of Atwater, north of Merced. The alignment would extend west across the San Joaquin Valley passing north of the town of Newman. The tracks would cross the Diablo Mountain Range in a series of tunnels, passing north of Henry Coe State Park. The alignment then would connect with the Caltrain/UPRR rail corridor north of SR 85.

- Tunnel under Park Option: This alignment is similar to the Northern Tunnel Option except that the segment through the Diablo Mountain Range would cross Henry W. Coe State Park primarily in tunnel. The alignment then would connect with the Caltrain/UPRR rail corridor north of SR 85.

- Minimize Tunnel Option: This alignment is similar to the Tunnel under Park Option except that the segment through the Diablo Mountain Range would cross Henry W. Coe State Park primarily at-grade. The alignment then would connect with the Caltrain/UPRR rail corridor north of SR 85.

1.1.3.2 Segment 2 –San José to San Francisco

There is one alignment being considered in this segment; it would provide for high-speed trains sharing tracks with Caltrain commuter trains. The entire alignment would be grade-separated, and all Caltrain stations would have four tracks or by-pass tracks.

Stations would include an optional station at Santa Clara; a station in either Palo Alto or Redwood City; a station in Millbrae near the San Francisco International Airport; and in San Francisco, a station at Fourth and King streets and at the lower level of the proposed new Transbay Terminal.

1.1.3.3 Segment 3 –San José to Oakland

There are two options under consideration for the alignment in this segment.

- I-880 Option: From San José, this alignment would follow north along I-880 and then transition to UPRR's Hayward rail line.

  Stations would include the planned Warm Springs Bay Area Rapid Transit (BART) Station in Fremont or the Union City BART Station; the Oakland Airport/Coliseum BART Station; and either the West Oakland Station or the 12th Street/City Center Station in Oakland.

- Mulford Line Option: From San José, this alignment would travel north along UPRR's Mulford rail line to the UPRR's Niles Line and then onto UPRR's Hayward line.

  Stations would include the Auto Mall Parkway Station or the Union City BART Station; the Oakland Airport/Coliseum BART Station; and in Oakland, either the West Oakland Station or the 12th Street/City Center Station.

1.1.3.4 Caveat on Trip Diversion

As intercity trips are diverted to the proposed HST system, the highway and aviation facilities will initially become less congested. The traveling public is likely to respond to this newly available capacity by making use of the facilities for all trips; not just intercity trips, similar to the situation described for the additional capacity in the Modal Alternative. Again, this phenomenon cannot be evaluated quantitatively at the scale of this analysis; suffice it to say that the assessment of the HST Alternative is likely to give an optimistic picture of the consequences of relieving congestion on roadways and airports in terms of level of service. But as for the Modal Alternative, the added system capacity would be a benefit to the transportation system, even if the benefit is "consumed" and not fully evident in the measures of congestion, and level of service.

2.0 BASELINE/AFFECTED ENVIRONMENT

2.1 SAN FRANCISCO BAY REGION AND STUDY AREA

2.1.1 Overview of Demographic and Travel Trends in the San Francisco Bay Area

In 2000, the nine-county San Francisco Bay Area had a population of 6.9 million persons and a total employment of 3.6 million jobs. By 2020, the Bay Area population is expected to increase to 7.8 million persons, an increase of 13 percent. Jobs are projected to rise by 23 percent over the same period. But the overall growth rate of less than one percent per year masks the greater increases expected by individual counties within the Bay Area. Furthermore, the nine counties immediately outside the nine-county Bay Area are projected to have even more rapid growth rates. Over the next 40 years, the fringe Bay Area counties are expected to grow faster than one percent per year, while the counties in the Central Valley and other adjacent locations are projected to have growth rates as high as two to three percent per year (Figure 5)

In 2000, Bay Area residents made about 21 million person trips per day, with about 82 percent by auto, six percent by transit, and the remaining 12 percent by bike and walk. Commercial trips, including goods movements, added another 270,000 trips per day within the Bay Area. Rapid growth over the previous decade has led to many congested commute routes into and within the Bay Area. Figure 6 illustrates the ten worst congestion locations in 2001. These congestion locations include the primary intercity corridors analyzed for the system alternatives: I-80 between San Francisco and Vallejo, I-580 near Pleasanton, I-880 between Fremont and San José, and US 101 between Sunnyvale and San José.

The projected population and job growth will greatly increase travel within and into the Bay Area between 2000 and 2020. Figure 7 illustrates the growth in top travel markets both within and into the Bay Area. Again, the affected corridors include the primary intercity corridors analyzed for the system alternatives. For example, 68 percent travel growth is projected for the I-580 corridor into the Bay Area by 2020, the corridor with the highest numerical growth. There is also 59 percent travel growth projected for the Livermore area through which I-580 passes. The second highest corridor in terms of numerical growth, the I-80 corridor, is projected to experience 84 percent increase in travel between Fairfield and Vallejo, with the travel growth into Solano County from Yolo and Sacramento counties will be 58 percent between 2000 and 2020. The US 101 corridor, the fourth highest corridor in terms of numerical growth, is projected to have 76 percent growth in travel northward into Santa Clara County, with southern Santa Clara County experiencing 44 percent travel growth over the same period.

Figure 8 summarizes these trends by showing the expected growth in commuting into the Bay Area from the surrounding counties between 1990 and 2020, primarily through the three intercity corridors of I-80, I-580, and US 101 (which includes SR 152). The growth of in-commuting growth over this period is expected to be 233 percent, a growth rate of over four percent per year. Given the difficulty of investing in regional transportation facilities, this growth in travel suggests greatly increased congestion by 2020.

2.1.2 Study Area

Figure 1 through Figure 4 defines the locations within Bay Area to Merced Region of the proposed High-Speed Train (HST) stations and alignments, the existing airports, and the existing highway and rail corridors. Figure 4 illustrates more specific locations of the proposed HST alignments and stations, including alternate station locations. The proposed HST station locations include the following along the Caltrain corridor:

Figure 5
Projected Population Growth Within and Outside Bay Area

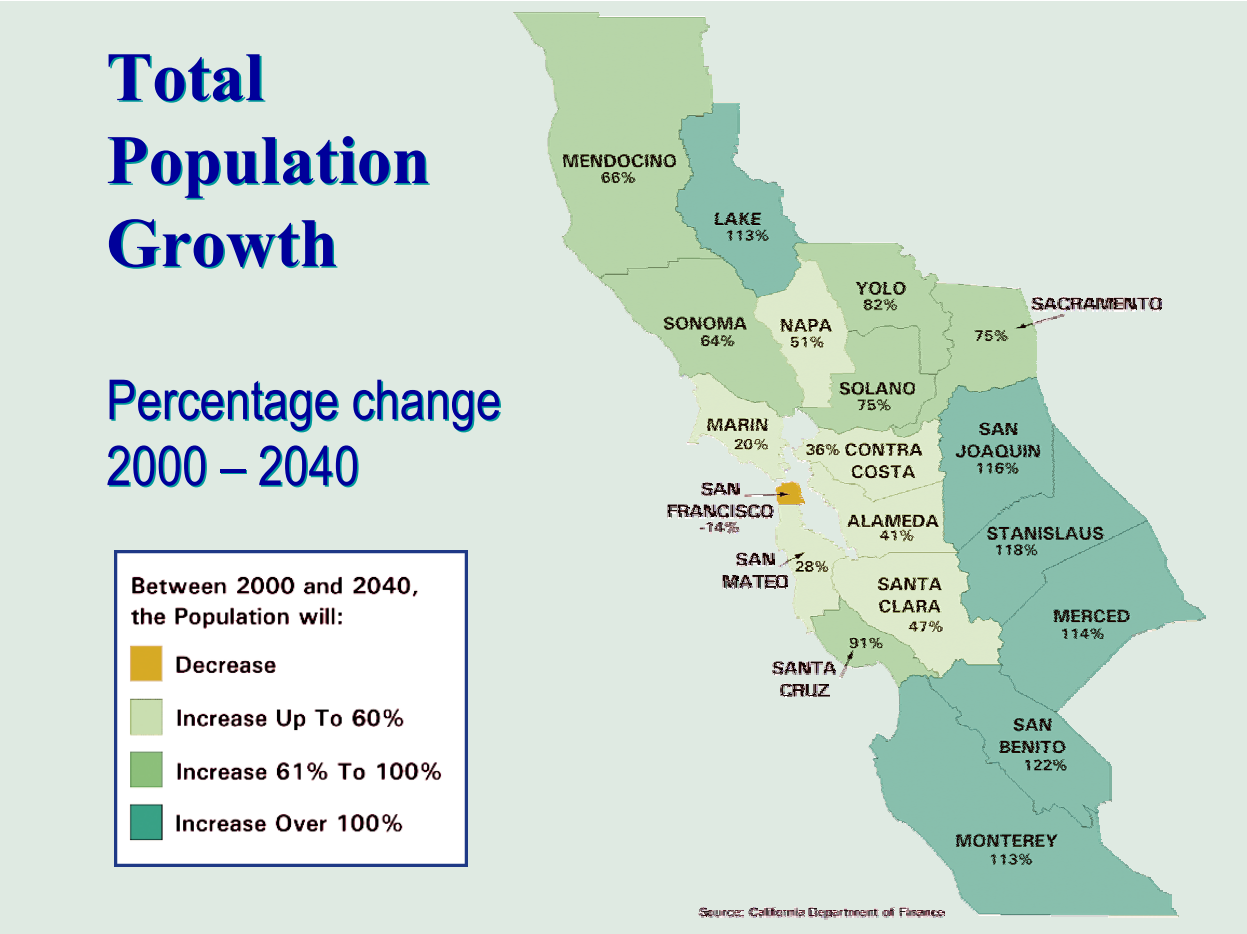

Figure 6
Worst Congestion Locations in San Francisco Bay Area in 2001

10 Worst Congestion Locations in 2001

2001 Rank	Location	Delay in Vehicle Hours	2000 Rank
1	**Interstate 80, westbound, a.m.** — Alameda/Contra Costa County *Route 4 to Bay Bridge metering lights*	9,410	1
2	**Interstate 880, southbound, a.m.** — Alameda County *South of Route 84 to north of Dixon Landing Road*	8,880	3
3	**Interstate 680, southbound, a.m.** — Alameda County *Sunol Road to south of Route 262*	8,510	2
4	**Interstate 80, eastbound and U.S. 101, northbound, p.m.** — San Francisco County *Army Street to west end of Bay Bridge*	5,050	5
5	**Interstate 580, eastbound, p.m.** — Alameda County *Hopyard Road to west of El Charro*	5,030	13
6	**U.S. 101, southbound, p.m.** — Santa Clara County Great America Parkway to 13th Street	4,100	4
7	**Interstate 880, northbound, p.m.** — Santa Clara/Alameda County *U.S. 101 to Dixon Landing Road*	4,000	12
8	**U.S. 101, southbound, a.m.** — Marin County *Rowland Boulevard to Interstate 580*	3,230	6
9	**Interstate 880, northbound, a.m.** — Alameda County *1 mile north of 7th Street to Bay Bridge*	2,920	10
10	**Route 84, westbound, a.m.** — Alameda County *Newark to Dumbarton Bridge Toll Plaza*	2,860	11

Source: Caltrans District 4